# Complete Summary

## TITLE

Childhood immunization status: percentage of enrolled children who had four diphtheria-tetanus-pertussis (DTaP/DT), three injectible polio virus (IPV), one measles-mumps-rubella (MMR), three haemophilus influenza type B (HiB), three hepatitis B, one chicken pox vaccination (VZV) and four pneumococcal conjugate vaccinations by their second birthday (combination #3).

## SOURCE(S)

National Committee for Quality Assurance (NCQA). HEDIS 2006. Health plan employer data & information set. Vol. 2, Technical specifications. Washington (DC): National Committee for Quality Assurance (NCQA); 2005. 350 p.

# Measure Domain

## PRIMARY MEASURE DOMAIN

Process

The validity of measures depends on how they are built. By examining the key building blocks of a measure, you can assess its validity for your purpose. For more information, visit the Measure Validity page.

## SECONDARY MEASURE DOMAIN

Does not apply to this measure

# Brief Abstract

## DESCRIPTION

For Childhood Immunization Status (CIS), two separate combination rates are calculated. This measure (combination #3) is used to assess the percentage of enrolled children who turned two years of age during the measurement year who were continuously enrolled for 12 months prior to the child's second birthday and who had four diphtheria-tetanus-pertussis (DTaP/DT), three injectible polio virus (IPV), one measles-mumps-rubella (MMR), three haemophilus influenza type B (HiB), three hepatitis B, one chicken pox vaccination (VZV) and four pneumococcal conjugate vaccines by their second birthday. See the related National Quality Measures Clearinghouse (NQMC) summary of the National Committee for Quality Assurance (NCQA) measure, Childhood immunization status: percentage of children who had four diphtheria-tetanus-pertussis (DTaP/DT), three injectible polio virus (IPV), one measles-mumps-rubella (MMR),

three haemophilus influenza type B (HiB), three hepatitis B and one chicken pox vaccination (VZV) by their second birthday (combination #2).

Note from the National Quality Measures Clearinghouse (NQMC): For this measure, there is both Administrative and Hybrid Specifications. This NQMC measure summary is based on the Administrative Specification. Refer to the original measure documentation for details pertaining to the Hybrid Specification.

### RATIONALE

A basic method for prevention of serious illness is immunization. Childhood immunizations help prevent serious illnesses such as polio, tetanus and hepatitis. Vaccines are an easy, proven way to help a child stay healthy and avoid the potentially harmful effects of childhood diseases such as mumps and measles. Even preventing "mild" diseases saves hundreds of lost school and workdays, not to mention millions of dollars.

Childhood vaccinations are not at optimal levels, despite their proven efficacy against some infectious diseases. By ensuring and encouraging proper immunization of children by the age of two, consumers, purchasers, and plans/providers will benefit from containing transmission of harmful and costly diseases.

### PRIMARY CLINICAL COMPONENT

Immunization; diphtheria; tetanus; pertussis; polio; measles; mumps; rubella; haemophilus influenza type B; hepatitis B; varicella zoster virus (chicken pox); pneumococcal conjugate

### DENOMINATOR DESCRIPTION

Enrolled children who turn two years of age during the measurement year (see the "Description of Case Finding" field in the Complete Summary)

### NUMERATOR DESCRIPTION

Children who received four diphtheria-tetanus-pertussis (DTaP/DT) vaccinations, three injectible polio virus (IPV) vaccinations, one measles-mumps-rubella (MMR) vaccination, three haemophilus influenza type B (HiB) vaccinations, three hepatitis B , one chicken pox vaccination (VZV) and four pneumococcal conjugate vaccines (combination #3) (see the related "Numerator Inclusions/Exclusions" field in the Complete Summary)

## Evidence Supporting the Measure

### EVIDENCE SUPPORTING THE CRITERION OF QUALITY

- A clinical practice guideline or other peer-reviewed synthesis of the clinical evidence
- A formal consensus procedure involving experts in relevant clinical, methodological, and organizational sciences

## Evidence Supporting Need for the Measure

NEED FOR THE MEASURE

Unspecified

## State of Use of the Measure

STATE OF USE

Current routine use

CURRENT USE

Accreditation
Decision-making by businesses about health-plan purchasing
Decision-making by consumers about health plan/provider choice
External oversight/Medicaid
External oversight/State government program
Internal quality improvement

## Application of Measure in its Current Use

CARE SETTING

Managed Care Plans

PROFESSIONALS RESPONSIBLE FOR HEALTH CARE

Measure is not provider specific

LOWEST LEVEL OF HEALTH CARE DELIVERY ADDRESSED

Single Health Care Delivery Organizations

TARGET POPULATION AGE

Children who turned two years or age during the measurement year

TARGET POPULATION GENDER

Either male or female

STRATIFICATION BY VULNERABLE POPULATIONS

Unspecified

## Characteristics of the Primary Clinical Component

### INCIDENCE/PREVALENCE

See "Burden of Illness" field.

### ASSOCIATION WITH VULNERABLE POPULATIONS

Children

### EVIDENCE FOR ASSOCIATION WITH VULNERABLE POPULATIONS

Centers for Disease Control and Prevention (CDC). National Immunization Program. What would happen if we stopped vaccinations?. [fact sheet online]. Atlanta (GA): Centers for Disease Control and Prevention (CDC); 2003 Aug 27[8 p].

### BURDEN OF ILLNESS

Currently there are about 1.25 million people who have life-long hepatitis B virus infection. Each year about 4,000-5,000 of these people die from related liver disease resulting in over $700 million of medical and work-loss costs. Approximately 25% of children who become infected with life-long hepatitis B virus would be expected to die of related liver disease as adults.

If vaccination for chicken pox were to stop, the disease would quickly return to its previous high rate of infection, and every child would miss a week of school, every parent a week of work, and 50-100 varicella-related deaths would occur each year, most of them in previously healthy children and adults.

The expected measles morbidity among a birth cohort of 4.1 million without vaccination against measles would be 3.7 million cases, over 350,000 complications, and 1,859 deaths, with total direct and indirect costs of $2.2 billion and $1.6 billion, respectively.

### EVIDENCE FOR BURDEN OF ILLNESS

Centers for Disease Control and Prevention (CDC). National Immunization Program. What would happen if we stopped vaccinations?. [fact sheet online]. Atlanta (GA): Centers for Disease Control and Prevention (CDC); 2003 Aug 27[8 p].

Hatziandreu EJ, Brown RE, Halpern MT. A cost benefit analysis of the measles mumps rubella (MMR) vaccine. Final report prepared for National Immunization Program, Centers for Disease Control and Prevention. Arlington (VA): Center for Public Health Research and Evaluation, Battelle Memorial Institute; 1994.

### UTILIZATION

Unspecified

COSTS

Vaccine-preventable diseases have a costly impact, resulting in doctor's visits, hospitalizations, and premature deaths. Sick children can also cause parents to lose time from work. Currently there are about 1.25 million people who have life-long hepatitis B virus infection. Each year about 4,000-5,000 of these people die from related liver disease, resulting in over $700 million of medical and work-loss costs. In 1990 in the U.S., the cost of caring for children who contracted chicken pox was estimated as $918 million annually.

EVIDENCE FOR COSTS

Centers for Disease Control and Prevention (CDC). National Immunization Program. What would happen if we stopped vaccinations?. [fact sheet online]. Atlanta (GA): Centers for Disease Control and Prevention (CDC); 2003 Aug 27[8 p].

## Institute of Medicine National Healthcare Quality Report Categories

IOM CARE NEED

Staying Healthy

IOM DOMAIN

Effectiveness

## Data Collection for the Measure

CASE FINDING

Both users and nonusers of care

DESCRIPTION OF CASE FINDING

Enrolled children who turn two years of age during the measurement year and who were continuously enrolled for 12 months prior to the child's second birthday with no more than one gap in enrollment of up to 45 days (commercial) or not more than a one-month gap in coverage (Medicaid) during the continuous enrollment period

DENOMINATOR SAMPLING FRAME

Enrollees or beneficiaries

DENOMINATOR INCLUSIONS/EXCLUSIONS

Inclusions
Enrolled children who turn two years of age during the measurement year

Exclusions
Children who had a contraindication for a specific vaccine may be excluded from the denominator. A managed care organization (MCO) that excludes contraindicated children may do so only if the administrative data do not indicate that the contraindicated immunization was rendered. The exclusion must have occurred by the second birthday.

The MCO should look for exclusions as far back as possible in the member's history and may use the following contraindications and codes in Table CIS-B in the original measure documentation to identify allowable exclusions.

## RELATIONSHIP OF DENOMINATOR TO NUMERATOR

All cases in the denominator are equally eligible to appear in the numerator

## DENOMINATOR (INDEX) EVENT

Patient Characteristic

## DENOMINATOR TIME WINDOW

Time window precedes index event

## NUMERATOR INCLUSIONS/EXCLUSIONS

Inclusions
Children who received four diphtheria-tetanus-pertussis (DTaP/DT) vaccinations, three injectible polio virus (IPV) vaccinations, one measles-mumps-rubella (MMR) vaccination, three haemophilus influenza type B (HiB) vaccinations, three hepatitis B, one chicken pox vaccination (VZV) and four pneumococcal conjugate vaccines (combination #3)

For all antigens, the managed care organization (MCO) may count evidence of any of the following:

- evidence of the antigen or combination vaccine, or
- documented history of the illness, or
- a seropositive test result.

For combination vaccinations that require more than one antigen (i.e., DTaP and MMR), the MCO must find evidence of all the antigens.

DTaP/DT: An initial DTaP vaccination followed by at least three DTaP, DT, or individual diphtheria and tetanus shots, with at least one diphtheria and one tetanus falling on or between the child's first and second birthdays. (DTP vaccinations are no longer manufactured; however, notations of DTP in medical records count toward the numerator.)

In states where the law allows an exception to a child who receives a pertussis vaccination, a child who has four diphtheria and four tetanus vaccinations is compliant.

IPV: At least three polio vaccinations (IPV) with different dates of service on or before the child's second birthday.

MMR: At least one measles, mumps and rubella (MMR) vaccination, with a date of service falling on or before the child's second birthday.

HiB: Three haemophilus influenza type B (HiB) vaccinations, with different dates of service on or before the child's second birthday.

Note: Because one particular type of HiB vaccine requires only three doses, the HEDIS measure requires the MCO to meet the minimum possible standard of three doses, rather than the recommended four doses.

Hepatitis B: Three hepatitis B vaccinations, with different dates of service on or before the child's second birthday.

VZV: At least one chicken pox vaccine (VZV) with a date of service falling on or between the child's second birthday.

Pneumococcal conjugate: At least four pneumococcal conjugate vaccinations on or before the child's second birthday.

Exclusions
DTaP/DT: Any vaccination (DTaP, DT, diphtheria, tetanus) administered prior to 42 days after birth cannot be counted.

IPV: IPV administered prior to 42 days after birth cannot be counted.

HiB: HiB administered prior to 42 days after birth cannot be counted.

MEASURE RESULTS UNDER CONTROL OF HEALTH CARE PROFESSIONALS, ORGANIZATIONS AND/OR POLICYMAKERS

The measure results are somewhat or substantially under the control of the health care professionals, organizations and/or policymakers to whom the measure applies.

NUMERATOR TIME WINDOW

Fixed time period

DATA SOURCE

Administrative data

LEVEL OF DETERMINATION OF QUALITY

Individual Case

PRE-EXISTING INSTRUMENT USED

Unspecified

## Computation of the Measure

SCORING

Rate

INTERPRETATION OF SCORE

Better quality is associated with a higher score

ALLOWANCE FOR PATIENT FACTORS

Analysis by subgroup (stratification on patient factors, geographic factors, etc.)

DESCRIPTION OF ALLOWANCE FOR PATIENT FACTORS

This measure requires that separate rates be reported for Medicaid and commercial product lines.

STANDARD OF COMPARISON

External comparison at a point in time
External comparison of time trends
Internal time comparison

## Evaluation of Measure Properties

EXTENT OF MEASURE TESTING

Unspecified

## Identifying Information

ORIGINAL TITLE

Childhood immunization status (CIS).

MEASURE COLLECTION

HEDIS® 2006: Health Plan Employer Data and Information Set

MEASURE SET NAME

Effectiveness of Care

DEVELOPER

National Committee for Quality Assurance

## ADAPTATION

Measure was not adapted from another source.

## RELEASE DATE

2005 Jan

## MEASURE STATUS

This is the current release of the measure.

## SOURCE(S)

National Committee for Quality Assurance (NCQA). HEDIS 2006. Health plan employer data & information set. Vol. 2, Technical specifications. Washington (DC): National Committee for Quality Assurance (NCQA); 2005. 350 p.

## MEASURE AVAILABILITY

The individual measure, "Childhood Immunization Status (CIS)," is published in "HEDIS 2006. Health Plan Employer Data & Information Set. Vol. 2, Technical Specifications."

For more information, contact the National Committee for Quality Assurance (NCQA) at 2000 L Street, N.W., Suite 500, Washington, DC 20036; Telephone: 202-955-3500; Fax: 202-955-3599; Web site: www.ncqa.org.

## COMPANION DOCUMENTS

The following is available:

- National Committee for Quality Assurance (NCQA). The state of health care quality 2005: industry trends and analysis. Washington (DC): National Committee for Quality Assurance (NCQA); 2005. 74 p.

For more information, contact the National Committee for Quality Assurance (NCQA) at 2000 L Street, N.W., Suite 500, Washington, DC 20036; Telephone: 202-955-3500; Fax: 202-955-3599; Web site: www.ncqa.org.

## NQMC STATUS

This NQMC summary was completed by ECRI on June 16, 2006. The information was not verified by the measure developer.

## COPYRIGHT STATEMENT

This NQMC summary is based on the original measure, which is subject to the measure developer's copyright restrictions.

For detailed specifications regarding the National Committee on Quality Assurance (NCQA) measures, refer to HEDIS Volume 2: Technical Specifications, available from the NCQA Web site at www.ncqa.org.



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